

A METHOD OF AND A SYSTEM FOR DISTRIBUTING ELECTRONIC CONTENT

FIELD OF THE INVENTION

The present invention relates to a system and associated method for the electronic sale and distribution of digital multimedia, such as audio or video signals, and more particularly, relates to a system and method in which digital multimedia, including audio or video signals, may be delivered between users having terminals enabling connection therebetween.

BACKGROUND OF THE INVENTION

Traditionally content, e.g. papers and magazines, is distributed in physical format by multimedia content distributors such content creators, content publishers and retail businesses. An advanced way to transfer movies, music, text, and similar files is through records, tapes, and compact discs, etc. Such items may be bought or rented in shops. These items may easily be traded, loaned, or otherwise "swapped" between friends. Further, devices have been developed for delivering of streaming content such as video, audio and MP3, and the like, and so such file swapping is becoming more attractive. The terminals are coming smaller and smaller, and they can easily be carried everywhere, and so the transferability of digital content is easily done. For example, there are numerous different small, portable models of MP3 players on the market.

Gaining access to information, e.g. digital content, that is available on the Internet conventionally requires a hardware connection to the Internet. While the Internet allows users to access information via any computer or terminal connected to the Internet, the

need for a hardware connection presents an undesirable physical limitation to Internet information access - a particular impediment to users who spend a substantial amount of time on the move. To purchase a multimedia presentation, song or video, requires the purchaser or end user to go to a location to purchase the songs or video, e.g. through a delivery point of digital media. As many users are not able to go to such a delivery point to purchase the digital media, it is desirable to obtain digital media through other channels. Thus, the delivery of digital media is desirably not limited to a specific place, but other possible channels are desirable, and particularly an inexpensive way to provide digital media to an end-user is desirable as well. Also, as users become more dependent on information and services provided on the Internet, it is desirable for such information and services to be available to persons who are moving about, and so who may not always have access to a connection to the Internet or to information providers of digital content. Consequently, different systems for and methods of transferring digital content are becoming increasingly important.

18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
1001
1002
1003
1004
1005
1006
1007
1008
1009
1010
1011
1012
1013
1014
1015
1016
1017
1018
1019
1020
1021
1022
1023
1024
1025
1026
1027
1028
1029
1030
1031
1032
1033
1034
1035
1036
1037
1038
1039
1040
1041
1042
1043
1044
1045
1046
1047
1048
1049
1050
1051
1052
1053
1054
1055
1056
1057
1058
1059
1060
1061
1062
1063
1064
1065
1066
1067
1068
1069
1070
1071
1072
1073
1074
1075
1076
1077
1078
1079
1080
1081
1082
1083
1084
1085
1086
1087
1088
1089
1090
1091
1092
1093
1094
1095
1096
1097
1098
1099
1100
1101
1102
1103
1104
1105
1106
1107
1108
1109
1110
1111
1112
1113
1114
1115
1116
1117
1118
1119
1120
1121
1122
1123
1124
1125
1126
1127
1128
1129
1130
1131
1132
1133
1134
1135
1136
1137
1138
1139
1140
1141
1142
1143
1144
1145
1146
1147
1148
1149
1150
1151
1152
1153
1154
1155
1156
1157
1158
1159
1160
1161
1162
1163
1164
1165
1166
1167
1168
1169
1170
1171
1172
1173
1174
1175
1176
1177
1178
1179
1180
1181
1182
1183
1184
1185
1186
1187
1188
1189
1190
1191
1192
1193
1194
1195
1196
1197
1198
1199
1200
1201
1202
1203
1204
1205
1206
1207
1208
1209
1210
1211
1212
1213
1214
1215
1216
1217
1218
1219
1220
1221
1222
1223
1224
1225
1226
1227
1228
1229
1230
1231
1232
1233
1234
1235
1236
1237
1238
1239
1240
1241
1242
1243
1244
1245
1246
1247
1248
1249
1250
1251
1252
1253
1254
1255
1256
1257
1258
1259
1260
1261
1262
1263
1264
1265
1266
1267
1268
1269
1270
1271
1272
1273
1274
1275
1276
1277
1278
1279
1280
1281
1282
1283
1284
1285
1286
1287
1288
1289
1290
1291
1292
1293
1294
1295
1296
1297
1298
1299
1300
1301
1302
1303
1304
1305
1306
1307
1308
1309
1310
1311
1312
1313
1314
1315
1316
1317
1318
1319
1320
1321
1322
1323
1324
1325
1326
1327
1328
1329
1330
1331
1332
1333
1334
1335
1336
1337
1338
1339
1340
1341
1342
1343
1344
1345
1346
1347
1348
1349
1350
1351
1352
1353
1354
1355
1356
1357
1358
1359
1360
1361
1362
1363
1364
1365
1366
1367
1368
1369
1370
1371
1372
1373
1374
1375
1376
1377
1378
1379
1380
1381
1382
1383
1384
1385
1386
1387
1388
1389
1390
1391
1392
1393
1394
1395
1396
1397
1398
1399
1400
1401
1402
1403
1404
1405
1406
1407
1408
1409
1410
1411
1412
1413
1414
1415
1416
1417
1418
1419
1420
1421
1422
1423
1424
1425
1426
1427
1428
1429
1430
1431
1432
1433
1434
1435
1436
1437
1438
1439
1440
1441
1442
1443
1444
1445
1446
1447
1448
1449
1450
1451
1452
1453
1454
1455
1456
1457
1458
1459
1460
1461
1462
1463
1464
1465
1466
1467
1468
1469
1470
1471
1472
1473
1474
1475
1476
1477
1478
1479
1480
1481
1482
1483
1484
1485
1486
1487
1488
1489
1490
1491
1492
1493
1494
1495
1496
1497
1498
1499
1500
1501
1502
1503
1504
1505
1506
1507
1508
1509
1510
1511
1512
1513
1514
1515
1516
1517
1518
1519
1520
1521
1522
1523
1524
1525
1526
1527
1528
1529
1530
1531
1532
1533
1534
1535
1536
1537
1538
1539
1540
1541
1542
1543
1544
1545
1546
1547
1548
1549
1550
1551
1552
1553
1554
1555
1556
1557
1558
1559
1560
1561
1562
1563
1564
1565
1566
1567
1568
1569
1570
1571
1572
1573
1574
1575
1576
1577
1578
1579
1580
1581
1582
1583
1584
1585
1586
1587
1588
1589
1590
1591
1592
1593
1594
1595
1596
1597
1598
1599
1600
1601
1602
1603
1604
1605
1606
1607
1608
1609
1610
1611
1612
1613
1614
1615
1616
1617
1618
1619
1620
1621
1622
1623
1624
1625
1626
1627
1628
1629
1630
1631
1632
1633
1634
1635
1636
1637
1638
1639
1640
1641
1642
1643
1644
1645
1646
1647
1648
1649
1650
1651
1652
1653
1654
1655
1656
1657
1658
1659
1660
1661
1662
1663
1664
1665
1666
1667
1668
1669
1670
1671
1672
1673
1674
1675
1676
1677
1678
1679
1680
1681
1682
1683
1684
1685
1686
1687
1688
1689
1690
1691
1692
1693
1694
1695
1696
1697
1698
1699
1700
1701
1702
1703
1704
1705
1706
1707
1708
1709
1710
1711
1712
1713
1714
1715
1716
1717
1718
1719
1720
1721
1722
1723
1724
1725
1726
1727
1728
1729
1730
1731
1732
1733
1734
1735
1736
1737
1738
1739
1740
1741
1742
1743
1744
1745
1746
1747
1748
1749
1750
1751
1752
1753
1754
1755
1756
1757
1758
1759
1760
1761
1762
1763
1764
1765
1766
1767
1768
1769
1770
1771
1772
1773
1774
1775
1776
1777
1778
1779
1780
1781
1782
1783
1784
1785
1786
1787
1788
1789
1790
1791
1792
1793
1794
1795
1796
1797
1798
1799
1800
1801
1802
1803
1804
1805
1806
1807
1808
1809
1810
1811
1812
1813
1814
1815
1816
1817
1818
1819
1820
1821
1822
1823
1824
1825
1826
1827
1828
1829
1830
1831
1832
1833
1834
1835
1836
1837
1838
1839
1840
1841
1842
1843
1844
1845
1846
1847
1848
1849
1850
1851
1852
1853
1854
1855
1856
1857
1858
1859
1860
1861
1862
1863
1864
1865
1866
1867
1868
1869
1870
1871
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050
2051
2052
2053
2054
2055
2056
2057
2058
2059
2060
2061
2062
2063
2064
2065
2066
2067
2068
2069
2070
2071
2072
2073
2074
2075
2076
2077
2078
2079
2080
2081
2082
2083
2084
2085
2086
2087
2088
2089
2090
2091
2092
2093
2094
2095
2096
2097
2098
2099
2100
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2117
2118
2119
2120
2121
2122
2123
2124
2125
2126
2127
2128
2129
2130
2131
2132
2133
2134
2135
2136
2137
2138
2139
2140
2141
2142
2143
2144
2145
2146
2147
2148
2149
2150
2151
2152
2153
2154
2155
2156
2157
2158
2159
2160
2161
2162
2163
2164
2165
2166
2167
2168
2169
2170
2171
2172
2173
2174
2175
2176
2177
2178
2179
2180
2181
2182
2183
2184
2185
2186
2187
2188
2189
2190
2191
2192
2193
2194
2195
2196
2197
2198
2199
2200
2201
2202
2203
2204
2205
2206
2207
2208
2209
2210
2211
2212
221

Cont
G2

context, a terminal having a passive mechanism will help the user in content downloading, while preferably retaining aspects of a browser based content access model to keep flexibility in what content can be accessed.

Further, an ability to take into account copyright rules needs to be arranged. The copying of digital content, e.g. music, is easily done, and such copying might violate the copyright laws if Digital Rights Management (DRM) technology is not effectively used. Various DRM technologies exist today and are based on more or less complex encryption and decryption schemes, where the necessary keys are created, distributed, and stored in various manners. These solutions are based on the idea that digital content is of no use if it is encrypted and can not be decrypted. Consequently, emphasis is placed on ensuring the robustness of the encryption schemes, rather than on preventing the actual content transfer operation.

Thus, as is apparent from the above discussion, there is a need to provide new services which may effectively use terminals in a controlled way, while taking into account copyright laws. Services which will enable access to wireless terminals are in great demand. Such services will also enable the terminal users to use their terminals efficiently. The present invention provides a solution to the aforementioned and other shortcomings of the prior art, while offering additional advantages over the prior art.

SUMMARY OF THE INVENTION

To overcome limitations in the prior art such as described above, and to overcome other limitations that will become apparent upon reading and understanding the present

specification, the present invention discloses a system, apparatus and method for transferring digital content between wireless terminals operating with a wireless connection, and more particularly in the areas of short range connection. The system provides a terminal the ability to communicate with another terminal in areas of short range connectivity.

5 In accordance with one embodiment of the invention, there is provided a method of distributing electronic content between terminal devices, which method comprises transferring selected electronic content from a first terminal device to a second terminal device according to predetermined tailoring information, said tailoring information defining what electronic content is able to be transferred between said first and second terminal devices. The method includes storing said tailoring information on a memory module, which is separate from and releasably attachable to at least said second terminal device, attaching said memory module to said second terminal device, and while so attached reading said tailoring information from said memory module into said second terminal device, and transferring electronic content from said first terminal device to said second terminal device according to the tailoring information read from said memory module when attached to said second terminal device.

10
15
20 *Sub A3* Further the present invention pertains to a method in which a memory module is releasably attachable to said first terminal device. The method includes attaching said memory module to said first terminal device, and while attached reading tailoring information from said memory module to said first terminal device, transferring electronic content from an access point to said first terminal device according to said tailoring

Cont
13
information read from said memory module when attached to said first terminal device,
and having received and stored the electronic content at said first terminal device, allowing
the electronic content to be transferred to said second terminal device in accordance with
the method above.

5 The present invention discloses a method to adjust and tailor the content that is
being delivered through a Push type of information exchange model . The invention
enables portability of preferences or settings in order to allow the user to transfer from one
terminal to another.

10
15
Furthermore, according to an embodiment, the present invention permits control
and prevention if needed of digital content forwarding from one user to another without
requiring any complex DRM scheme, although this does not exclude DRMs that could be
used in combination with an embodiment of the invention. The main advantage is that it
does not necessarily require the existence and usage of any DRM technique. The content
does not necessarily have to be encrypted for the invention to be applicable. The invention
is as efficient with non-encrypted content as it is with encrypted content. The invention is
meant for devices that are fitted with IC card readers.

20
There is no need for browser software in the terminal for receiving files from
another terminal. The only active operation the user has to do is insert a card, or
information relating to the IC card, into the terminal. The terminal has the benefit of
selecting content already downloaded in the terminal. The terminal may have means for
surfing off-line within documents received.

In many cases the terminal user does not want to be active and browse. Therefore

a process that is automatic and comfortable to use is needed. In order to achieve this, the content still needs to be selected. This is usually done by the user using a browser.

According to the invention, IC cards, as a preferred embodiment, are used for storing selection information in the form of parameters, called tailoring parameters, the selection information preferably is stored on the IC card and entered into the terminal from the card.

The method according to an embodiment of the invention comprises enabling a terminal, having an IC card inserted in a card reader, to provide content to be delivered from the terminal to another terminal if the services specified in the IC card and the content match with each other, taking into consideration that the content contains information that was not transmitted to the terminal device previously.

Furthermore, having the IC card inserted into the terminal and a radio frequency (RF) link between the terminals, one of the terminals reads the tailoring parameters through the RF link. The user not having a terminal, but having a card, may get access to content through different terminals of different card owners.

Furthermore, according to the present invention the transfer of tailoring parameters includes a time dependent subscription for the content. Each consumer may purchase the right to listen, read or view digital content for a certain period with charges made against a fee paid on the IC card. Then, automatic downloading between the terminals for the specific content is available during that time period.

Furthermore, according to an embodiment of the present invention the transferred content may include information in digital format. The digital information may include at least one of the following: movies, music, games, electronic magazines, periodicals,

newspaper and television news.

Furthermore, according to an embodiment of the present invention the transferred data includes a prepaid amount of the content. The pre-payment may occur on buying the IC card. The IC card includes information identifying the content for which the card is payment, i.e. what content will be exchanged between the terminals.

Furthermore, according to an embodiment of the present invention, a certificate is connected to the goods/services or other content to be delivered between the terminals. The tailoring parameters in the certificate transferred from the IC card are compared with a certificate stored in a register of certificates in one terminal, allowing delivery only if a match occurs between the transmitted and the stored certificates.

Furthermore, according to a further embodiment of the present invention the invention relates to gathering of information on how many media, how much data, and what data are transmitted between the terminals. Thus a count on copyright payments for musical compositions, for example, may be maintained.

According to a third aspect of the invention there is provided a memory module for storing information and for use with a terminal device. The memory module includes a storage medium for storing tailoring information relating to specific electronic content, the tailoring information defining the specific electronic content that the memory module authorizes to be transferable to the terminal device, and an interface for mechanically and electrically coupling the memory module to the terminal device, the memory module being releasably attachable by a user to the terminal device to bring the memory module into mechanical and electrical contact with the terminal device.

According to a fourth aspect of the invention there is provided a terminal device having means for wireless communication. The terminal device includes a storage device for storing tailoring information relating to specific electronic content, an interface for mechanically and electrically coupling the storage device to the terminal device, the interface allowing releasable attachment of the storage device by a user to the terminal device to bring the storage device into mechanical and electrical contact with the terminal device, means for reading the tailoring information from the storage device into the terminal device when the storage device is mechanically and electrically connected to the terminal device, the tailoring information defining specific electronic content that the storage device authorizes as being transferable to the terminal device, and means for transmitting the tailoring information over the wireless communication in order to receive electronic content by the terminal device according to the tailoring information read from the storage device.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other objects and features of the invention will become more apparent from the preferred embodiments described with reference to the attached drawings, which are for the purposes of illustration and not for limiting the invention. In the drawings:

Fig. 1 is a block diagram of a terminal in accordance with an embodiment of the invention,

Fig. 2 is a block diagram of an embodiment of an IC card according to the invention,

Fig. 3 illustrates an embodiment of a method for two Bluetooth devices to operate when establishing a connection in accordance with the invention,

Fig. 4 illustrates communication between two terminals in accordance with an embodiment of the invention,

5 Fig. 5 is a block diagram of a terminal in accordance with another embodiment of the invention,

Fig. 6 is a block diagram of a semi hardware tamper resistant module in accordance with an embodiment of the invention,

10 Fig. 7 illustrates in more detail an identification packet in accordance with an embodiment of the invention, and

Fig. 8 illustrates an example of the data stream structure in accordance with an embodiment of the invention,

DETAILED DESCRIPTION

15 In the following description of the various embodiments, reference is made to the accompanying drawings which form a part hereof, and in which are shown by way of illustration various embodiments in which the invention may be practiced. It is to be understood that other embodiments may be utilized, and structural and functional modifications may be made without departing from the scope of the present invention.

20 This invention proposes a way for the transfer of digital content from one user to another user under the control of IC cards. In this invention, each user has a terminal that is fitted with an IC card slot. In the terminal of the user who wishes to initiate the transfer,

there is, locally stored, some digital content. For the transfer of this content to the other user to be allowed, IC cards that give the right to transfer and receive the above content must be inserted on both terminals.

Fig. 1 depicts in a block diagram a terminal 10 in accordance with an embodiment of the invention. The terminal 10 comprises a display 112, a random access memory (RAM) 114, a read only memory (ROM) 116, an output/input unit 118, such as keypad e.g. for entering text etc., a RF transceiver 120 for communication with other transceivers, e.g. transceivers in other terminals, an antenna 122, and controller or CPU 124 for controlling the various functions of the terminal. Neither a conventional telephone keypad nor a QWERTY keypad is a requirement, as the user needs, in the preferred embodiment, only to accept files for downloading, make selections from the downloaded items, and possibly browse in the downloaded information. Thus instead of a full keypad, only a key with the functionality to control the above operations is required. Further in a preferred embodiment of the invention the terminal may have a card reader 126. CPU 124 controls the card reader 126. Further the terminal typically includes a battery pack (not shown) for power supply. Preferably, but not necessarily the transceiver 120 enables short range, low power RF communication, like Bluetooth, with another terminal. The terminal 10 may have a slot (not shown) therein to receive an IC card 40 (Fig. 2) in the card reader 126.

IC cards or electronic chip cards are usually the size of a conventional credit card and have six or eight electrical contacts on one face and include an integrated circuit with a memory, and may include microprocessors. Data and programs for manipulating the data and communicating outside the card are included in the integrated circuit. In the past the

cards, such as prepaid cards have been widely used in the purchase of telephone service, particularly in France and Germany, where public pay telephones accept the prepaid cards instead of coins. Typically the prepaid cards are purchased at a post office for a specific amount. The cards are inserted in a public pay telephone, connection is made through the contacts and units of value are removed from the card as the telephone call progresses.

The mechanical and electrical specifications of the cards are standardized, and one set of standards is published by the ANSI (American National Standards Institute), 11 West 42 Street, New York, N.Y. 10036 under the title "Identification cards-Integrated circuit(s) cards with contacts" ISO 7816-1 and ISO 7816-2. Smart cards have been manufactured and are commercially available from several companies including e.g. GEMPLUS Card International, Avenue du Pic de Bertagne, Parc d'activites de la Plaine de Jouques, 13420 Gemenos, France.

Once the prepaid card has been consumed, i.e. all of the units or value of the card have been used conventionally in calls, the user has to buy another card or to refill the empty card to continue with the service. The IC card which is purchased in advance and which is inserted into a terminal may be active as soon as it has been purchased. The activity of the card may be given for only a certain period of time. Thus the activity depends on the time limits given to the card.

In Fig. 2 an IC card 40 such as described above is depicted. IC card 40 includes a CPU 140, a smart card identification code such as a serial number 142, a tailoring parameters register 144, and contacts 146 for enabling mechanical and electrical contact with card reader 126 in terminal 10. Tailoring parameters 144, including a card ID, are

stored in the IC card memory 148. The card validity might be based on a fee paid periodically, such as monthly or annually. After the paid amount is received, the corresponding entry is made in a validity register.

5 With regard to the various elements of the IC card as being on an integrated circuit, the microprocessor 140 and several registers 151 or 153 may be all contained within a single chip. Also the information need not be allocated to unique spaces within the IC card memory. For example, the various numbers in the registers may be moved around under the control of the microprocessor 140. This would be in accordance with the design of the particular IC card chip. The serial number of the IC card and possible other functions like time and dates of validity may be written into the integrated circuit at the time of manufacture, or subsequent to manufacture. Any convenient or conventional type of circuit and method for the entry of such data may be used.

10
15
20
Sub
Q3
Figure 3 illustrates one embodiment a method for two Bluetooth devices 20, 30 to operate when establishing a connection. The first Bluetooth device 20 takes the initiative and regularly performs inquiries to discover surrounding Bluetooth terminal devices such as device 30. During the first phase of the process, the first Bluetooth device 20 and the other Bluetooth device 30 form a first Bluetooth connection, thus forming a piconet. The following steps are involved in forming a piconet: As is known from the Bluetooth specification, first inquiries 150 are executed for establishing a connection. After successful completion of inquiries, paging 152 is activated. After paging a Service Discovery Protocol (SDP) channel is opened 154, and the SDP session starts 156. All necessary information for establishing a Bluetooth connection is gathered, including but

not limited to e.g. the other Bluetooth device's baseband address, and clock offset information from the inquiry mode, the Bluetooth class of the other Bluetooth device and supported services information of the devices from the SDP mode. After the information is gathered, a non-SDP nature channel 158 can be opened for Bluetooth communication between the devices 20, 30. Available channels in the Bluetooth protocol architecture are illustrated and can be found in more detail in the Bluetooth specifications. When the communication between the Bluetooth devices 20, 30, is to be concluded, the first Bluetooth device 20, or the second Bluetooth device 30, sends a Link Manager Protocol detach message 160 that terminates the session between the devices 20, 30.

Once a consumer utilizes multimedia file(s) on his or her own wireless personal multimedia terminal, after receiving such file(s) properly, he or she might want to forward such file(s) to another user, i.e. a friend. The following conditions may be imposed for user to user distribution between compatible user terminals. In a first step an IC card 40 is inserted in the sender wireless terminal 20, as depicted in Figure 4. The user selects and activates the "file forward" function mode of wireless terminal 20. The above two steps can be done in the opposite sequence, if desired. Wireless terminal 20 checks the user multimedia database and application identifications (AIDs) 153 (Fig. 2) of the inserted IC card 40. Card 40 then presents a list of multimedia file identifiers (MFIDs) 151 of multimedia data, or part of the MFIDs 151 (e.g. just the titles of the files), which are authorized to be forwarded to another authorized user terminal 30. The user selects and marks the multimedia file(s) 60 that he or she choses to be ready for forwarding to the other authorized user terminal 30. Wireless terminal 20 activates its wireless interface

system and looks for the other terminal 30. The recipient user terminal 30 has inserted into its card reader 126 an IC card 50 containing the same AID(s) 153 as specified in the multimedia file(s) 60 to be forwarded. The recipient user selects and activates the "file receiving" function mode of terminal 30. The above two steps can be done in the opposite sequence, if desired. The recipient terminal 30 activates its wireless interface system and a communication link 130 is formed between the two terminals 20, 30. The sender terminal 20 matches the AID(s) 153 of the MFID list 151 which are marked as authorized for forwarding and the AID(s) 153 presented by the recipient wireless terminal 30. This authority of relevant multimedia is set in the MFID 151 as defined in one embodiment of this invention. The sender terminal 20 reads the MFID(s) 151 stored in the user multimedia database of recipient terminal 30 and matches these MFID(s) 151 to the MFID(s) stored in the user multimedia database of the sender terminal 20 which are marked to forward. If the recipient terminal 30 already stores the same MFID(s), such overlapped multimedia file(s) 60 are unmarked from the list of MFID(s) for forwarding. Then the marked multimedia file(s) 60 are downloaded from sender wireless terminal 20 to recipient terminal 30 automatically. The sender terminal 20 then shuts down wireless interface connection.

This invention implements an additional authentication method on top of the short range wireless interface standard. The link 130 between the terminals 20 and 30 is established based on authentication maintained during a single integrated procedure. If the link 130 is broken, it is required that the whole procedures be restarted. This requirement enhances the security of the system.

Sub
A6

The second condition for authorization for the transfer to actually take place is that there must be a match between the content for which the IC card 40 inserted in the receiving terminal 30 gives reception authorization and the content that is to be sent. Reception authorization can be linked to the type of content and/or the distributor of the content and/or the author of the content, as examples. Before the transfer operation can actually take place, the sender terminal must read the reception authorization stored on the IC card 40 that is inserted in the sender terminal, and check whether there is a match between the content to be sent and the authorization carried by the IC card that is inserted in the receiving terminal. Thus, the sender terminal must be authorized to send the file, and the recipient terminal must be authorized to receive the file, although either one of these could be omitted.

The invention would fit very well in systems where content transfer is carried out over a Bluetooth link. In such a case, reception authorization information like the AID present in the IC card that is inserted in the receiving terminal 30 could be copied into a Bluetooth Service Record and queried by the sender terminal 20 using a standard Bluetooth Service Record operation after the connection 130 between the two terminals is established. Upon completion of this query, and provided the reception authorization is found and the forwarding authorization and the content to forward match, content forwarding could advantageously take place using the Bluetooth File Transfer profile. The users need matching cards and matching content. This should be described in the user manual of the product and would be very easy to check. If there are multiple matching AIDs contained in multimedia files stored in the wireless terminal and in an IC card

inserted in the wireless terminal, the wireless terminal can execute such multimedia files designated by the AIDs in either of two ways -- execute relevant multimedia files automatically in a certain order, or provide a list of AIDs at the display for multimedia file selection by user.

5 Figure 5 illustrates an embodiment of a dynamic random access memory (DRAM) according to the invention. Wireless terminal 20 stores multimedia files 60 in a DRAM of multimedia database 210. MPEG decoding unit 222 and audio digital/analog decoding unit 224 are maintained in a hardware tamper resistant modules (HTRM) 220. Transceiver 120, microprocessor(s) 124, and ROM or flash memory area 116 are also in the HTRM 220. The embodiment of the wireless terminal of this invention has common authentication and key management schemes in HTRM 220. The electronic power for DRAM 210 is supplied through HTRM 220 of the wireless terminal. Therefore, when the DRAM 210 is detached from HTRM 220, multimedia file(s) 60 stored in the DRAM 210 are automatically erased.

10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
105
110
115
120
125
130
135
140
145
150
155
160
165
170
175
180
185
190
195
200
205
210
215
220
225
230
235
240
245
250
255
260
265
270
275
280
285
290
295
300
305
310
315
320
325
330
335
340
345
350
355
360
365
370
375
380
385
390
395
400
405
410
415
420
425
430
435
440
445
450
455
460
465
470
475
480
485
490
495
500
505
510
515
520
525
530
535
540
545
550
555
560
565
570
575
580
585
590
595
600
605
610
615
620
625
630
635
640
645
650
655
660
665
670
675
680
685
690
695
700
705
710
715
720
725
730
735
740
745
750
755
760
765
770
775
780
785
790
795
800
805
810
815
820
825
830
835
840
845
850
855
860
865
870
875
880
885
890
895
900
905
910
915
920
925
930
935
940
945
950
955
960
965
970
975
980
985
990
995
1000
1005
1010
1015
1020
1025
1030
1035
1040
1045
1050
1055
1060
1065
1070
1075
1080
1085
1090
1095
1100
1105
1110
1115
1120
1125
1130
1135
1140
1145
1150
1155
1160
1165
1170
1175
1180
1185
1190
1195
1200
1205
1210
1215
1220
1225
1230
1235
1240
1245
1250
1255
1260
1265
1270
1275
1280
1285
1290
1295
1300
1305
1310
1315
1320
1325
1330
1335
1340
1345
1350
1355
1360
1365
1370
1375
1380
1385
1390
1395
1400
1405
1410
1415
1420
1425
1430
1435
1440
1445
1450
1455
1460
1465
1470
1475
1480
1485
1490
1495
1500
1505
1510
1515
1520
1525
1530
1535
1540
1545
1550
1555
1560
1565
1570
1575
1580
1585
1590
1595
1600
1605
1610
1615
1620
1625
1630
1635
1640
1645
1650
1655
1660
1665
1670
1675
1680
1685
1690
1695
1700
1705
1710
1715
1720
1725
1730
1735
1740
1745
1750
1755
1760
1765
1770
1775
1780
1785
1790
1795
1800
1805
1810
1815
1820
1825
1830
1835
1840
1845
1850
1855
1860
1865
1870
1875
1880
1885
1890
1895
1900
1905
1910
1915
1920
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
2095
2100
2105
2110
2115
2120
2125
2130
2135
2140
2145
2150
2155
2160
2165
2170
2175
2180
2185
2190
2195
2200
2205
2210
2215
2220
2225
2230
2235
2240
2245
2250
2255
2260
2265
2270
2275
2280
2285
2290
2295
2300
2305
2310
2315
2320
2325
2330
2335
2340
2345
2350
2355
2360
2365
2370
2375
2380
2385
2390
2395
2400
2405
2410
2415
2420
2425
2430
2435
2440
2445
2450
2455
2460
2465
2470
2475
2480
2485
2490
2495
2500
2505
2510
2515
2520
2525
2530
2535
2540
2545
2550
2555
2560
2565
2570
2575
2580
2585
2590
2595
2600
2605
2610
2615
2620
2625
2630
2635
2640
2645
2650
2655
2660
2665
2670
2675
2680
2685
2690
2695
2700
2705
2710
2715
2720
2725
2730
2735
2740
2745
2750
2755
2760
2765
2770
2775
2780
2785
2790
2795
2800
2805
2810
2815
2820
2825
2830
2835
2840
2845
2850
2855
2860
2865
2870
2875
2880
2885
2890
2895
2900
2905
2910
2915
2920
2925
2930
2935
2940
2945
2950
2955
2960
2965
2970
2975
2980
2985
2990
2995
3000
3005
3010
3015
3020
3025
3030
3035
3040
3045
3050
3055
3060
3065
3070
3075
3080
3085
3090
3095
3100
3105
3110
3115
3120
3125
3130
3135
3140
3145
3150
3155
3160
3165
3170
3175
3180
3185
3190
3195
3200
3205
3210
3215
3220
3225
3230
3235
3240
3245
3250
3255
3260
3265
3270
3275
3280
3285
3290
3295
3300
3305
3310
3315
3320
3325
3330
3335
3340
3345
3350
3355
3360
3365
3370
3375
3380
3385
3390
3395
3400
3405
3410
3415
3420
3425
3430
3435
3440
3445
3450
3455
3460
3465
3470
3475
3480
3485
3490
3495
3500
3505
3510
3515
3520
3525
3530
3535
3540
3545
3550
3555
3560
3565
3570
3575
3580
3585
3590
3595
3600
3605
3610
3615
3620
3625
3630
3635
3640
3645
3650
3655
3660
3665
3670
3675
3680
3685
3690
3695
3700
3705
3710
3715
3720
3725
3730
3735
3740
3745
3750
3755
3760
3765
3770
3775
3780
3785
3790
3795
3800
3805
3810
3815
3820
3825
3830
3835
3840
3845
3850
3855
3860
3865
3870
3875
3880
3885
3890
3895
3900
3905
3910
3915
3920
3925
3930
3935
3940
3945
3950
3955
3960
3965
3970
3975
3980
3985
3990
3995
4000
4005
4010
4015
4020
4025
4030
4035
4040
4045
4050
4055
4060
4065
4070
4075
4080
4085
4090
4095
4100
4105
4110
4115
4120
4125
4130
4135
4140
4145
4150
4155
4160
4165
4170
4175
4180
4185
4190
4195
4200
4205
4210
4215
4220
4225
4230
4235
4240
4245
4250
4255
4260
4265
4270
4275
4280
4285
4290
4295
4300
4305
4310
4315
4320
4325
4330
4335
4340
4345
4350
4355
4360
4365
4370
4375
4380
4385
4390
4395
4400
4405
4410
4415
4420
4425
4430
4435
4440
4445
4450
4455
4460
4465
4470
4475
4480
4485
4490
4495
4500
4505
4510
4515
4520
4525
4530
4535
4540
4545
4550
4555
4560
4565
4570
4575
4580
4585
4590
4595
4600
4605
4610
4615
4620
4625
4630
4635
4640
4645
4650
4655
4660
4665
4670
4675
4680
4685
4690
4695
4700
4705
4710
4715
4720
4725
4730
4735
4740
4745
4750
4755
4760
4765
4770
4775
4780
4785
4790
4795
4800
4805
4810
4815
4820
4825
4830
4835
4840
4845
4850
4855
4860
4865
4870
4875
4880
4885
4890
4895
4900
4905
4910
4915
4920
4925
4930
4935
4940
4945
4950
4955
4960
4965
4970
4975
4980
4985
4990
4995
5000
5005
5010
5015
5020
5025
5030
5035
5040
5045
5050
5055
5060
5065
5070
5075
5080
5085
5090
5095
5100
5105
5110
5115
5120
5125
5130
5135
5140
5145
5150
5155
5160
5165
5170
5175
5180
5185
5190
5195
5200
5205
5210
5215
5220
5225
5230
5235
5240
5245
5250
5255
5260
5265
5270
5275
5280
5285
5290
5295
5300
5305
5310
5315
5320
5325
5330
5335
5340
5345
5350
5355
5360
5365
5370
5375
5380
5385
5390
5395
5400
5405
5410
5415
5420
5425
5430
5435
5440
5445
5450
5455
5460
5465
5470
5475
5480
5485
5490
5495
5500
5505
5510
5515
5520
5525
5530
5535
5540
5545
5550
5555
5560
5565
5570
5575
5580
5585
5590
5595
5600
5605
5610
5615
5620
5625
5630
5635
5640
5645
5650
5655
5660
5665
5670
5675
5680
5685
5690
5695
5700
5705
5710
5715
5720
5725
5730
5735
5740
5745
5750
5755
5760
5765
5770
5775
5780
5785
5790
5795
5800
5805
5810
5815
5820
5825
5830
5835
5840
5845
5850
5855
5860
5865
5870
5875
5880
5885
5890
5895
5900
5905
5910
5915
5920
5925
5930
5935
5940
5945
5950
5955
5960
5965
5970
5975
5980
5985
5990
5995
6000
6005
6010
6015
6020
6025
6030
6035
6040
6045
6050
6055
6060
6065
6070
6075
6080
6085
6090
6095
6100
6105
6110
6115
6120
6125
6130
6135
6140
6145
6150
6155
6160
6165
6170
6175
6180
6185
6190
6195
6200
6205
6210
6215
6220
6225
6230
6235
6240
6245
6250
6255
6260
6265
6270
6275
6280
6285
6290
6295
6300
6305
6310
6315
6320
6325
6330
6335
6340
6345
6350
6355
6360
6365
6370
6375
6380
6385
6390
6395
6400
6405
6410
6415
6420
6425
6430
6435
6440
6445
6450
6455
6460
6465
6470
6475
6480
6485
6490
6495
6500
6505
6510
6515
6520
6525
6530
6535
6540
6545
6550
6555
6560
6565
6570
6575
6580
6585
6590
6595
6600
6605
6610
6615
6620
6625
6630
6635
6640
6645
6650
6655
6660
6665
6670
6675
6680
6685
6690
6695
6700
6705
6710
6715
6720
6725
6730
6735
6740
6745
6750
6755
6760
6765
6770
6775
6780
6785
6790
6795
6800
6805
6810
6815
6820
6825
6830
6835
6840
6845
6850
6855
6860
6865
6870
6875
6880
6885
6890
6895
6900
6905
6910
6915
6920
6925
6930
6935
6940
6945
6950
6955
6960
6965
6970
6975
6980
6985
6990
6995
7000
7005
7010
7015
7020
7025
7030
7035
7040
7045
7050
7055
7060
7065
7070
7075
7080
7085
7090
7095
7100
7105
7110
7115
7120
7125
7130
7135
7140
7145
7150
7155
7160
7165
7170
7175
7180
7185
7190
7195
7200
7205
7210
7215
7220
7225
7230
7235
7240
7245
7250
7255
7260
7265
7270
7275
7280
7285
7290
7295
7300
7305
7310
7315
7320
7325
7330
7335
7340
7345
7350
7355
7360
7365
7370
7375
7380
7385
7390
7395
7400
7405
7410
7415
7420
7425
7430
7435
7440
7445
7450
7455
7460
7465
7470
7475
7480
7485
7490
7495
7500
7505
7510
7515
7520
7525
7530
7535
7540
7545
7550
7555
7560
7565
7570
7575
7580
7585
7590
7595
7600
7605
7610
7615
7620
7625
7630
7635
7640
7645
7650
7655
7660
7665
7670
7675
7680
7685
7690
7695
7700
7705
7710
7715
7720
7725
7730
7735
7740
7745
7750
7755
7760
7765
7770
7775
7780
7785
7790
7795
7800
7805
7810
7815
7820
7825
7830
7835
7840
7845
7850
7855
7860
7865
7870
7875
7880
7885
7890
7895
7900
7905
7910
7915
7920
7925
7930
7935
7940
7945
7950
7955
7960
7965
7970
7975
7980
7985
7990
7995
8000
8005
8010
8015
8020
8025
8030
8035
8040
8045
8050
8055
8060
8065
8070
8075
8080
8085
8090
8095
8100
8105
8110
8115
8120
8125
8130
8135
8140
8145
8150
8155
8160
8165
8170
8175
8180
8185
8190
8195
8200
8205
8210
8215
8220
8225
8230
8235
8240
8245
8250
8255
8260
8265
8270
8275
8280
8285
8290
8295
8300
8305
8310
8315
8320
8325
8330
8335
8340
8345
8350
8355
8360
8365
8370
8375
8380
8385
8390
8395
8400
8405
8410
8415
8420
8425
8430
8435
8440
8445
8450
8455
8460
8465
8470
8475
8480
8485
8490
8495
8500
8505
8510
8515
8520
8525
8530
8535
8540
8545
8550
8555
8560
8565
8570
8575
8580
8585
8590
8595
8600
8605
8610
8615
8620
8625
8630
8635
8640
8645
8650
8655
8660
8665
8670
8675
8680
8685
8690
8695
8700
8705
8710
8715
8720
8725
8730
8735
8740
8745
8750
8755
8760
8765
8770
8775
8780
8785
8790
8795
8800
8805
8810
8815
8820
8825
8830
8835
8840
8845
8850
8855
8860
8865
8870
8875
8880
8885
8890
8895
8900
8905
8910
8915
8920
8925
8930
8935
8940
8945
8950
8955
8960
8965
8970
8975
8980
8985
8990
8995
9000
9005
9010
9015
9020
9025
9030
9035
9040
9045
9050
9055
9060
9065
9070
9075
9080
9085
9090
9095
9100
9105
9110
9115
9120
9125
9130
9135
9140
9145
9150
9155
9160
9165
9170
9175
9180
9185
9190
9195
9200
9205
9210
9215
9220
9225
9230
9235
9240
9245
9250
9255
9260
9265
9270
9275
9280
9285
9290
9295
9300
9305
9310
9315
9320
9325
9330
9335
9340
9345
9350
9355
9360
9365
9370
9375
9380
9385
9390
9395
9400
9405
9410
9415
9420
9425
9430
9435
9440
9445
9450
9455
9460
9465
9470
9475
9480
9485
9490
9495
9500
9505
9510
9515
9520
9525
9530
9535
9540
9545
9550
9555
9560
9565
9570
9575
9580
9585
9590
9595
9600
9605
9610
9615
9620
9625
9630
9635
9640
9645
9650
9655
9660
9665
9670
9675
9680
9685
9690
9695
9700
9705
9710
9715
9720
9725
9730
9735
9740
9745
9750
9755
9760
9765
9770
9775
9780
9785
9790
9795
9800
9805
9810
9815
9820
9825
9830
9835
9840
9845
9850
9855
9860
9865
9870
9875
9880
9885
9890
9895
9900
9905
9910
9915
9920
9925
9930
9935
9940
9945
9950
9955
9960
9965
9970
9975
9980
9985
9990
9995
10000
10005
10010
10015
10020
10025
10030
10035
10040
10045
10050
10055
10060
10065
10070
10075
10080
10085
10090
10095
10100
10105
10110
10115
10120
10125
10130
10135
10140
10145
10150
10155
10160
10165
10170
10175
101

environment and through secure processes.

5 The authorization information may indicate a specific multimedia file, a group of multimedia files, a category of multimedia files, a maximum number of multimedia files, or a maximum value of multimedia files that the users are authorized to exchange, whether to audio output device 111, video display device 112, or via user output interface 118 to a magnetic media output device coupled by link 113. By exchanging is meant providing information between terminals in audio format via audio output device 111, providing information in video format via display device 112, or providing information in electronic format via link 113.

10 In a wireless environment, one embodiment of the invention may be using a Bluetooth connection between terminals. When doing an inquiry after an IC card is inserted and the short range connectivity status is selected from the menu by pushing a button on the terminal, the sender terminal might detect several other terminals. A mechanism to distinguish the Master from the Slave is described now. If an IC card is simply introduced into a terminal without any other interaction, the terminal goes into a inquiry scan, i.e. listens for inquiry packets from other terminals. This happens on a terminal that wishes to receive content. This is a slave terminal. On a terminal that wishes to send content, the IC card must be introduced, and the user perform an additional triggering action, e.g. by selecting from a menu a "forwarding" option. Then the terminal goes into an inquiry mode, i.e. the terminal sends out inquiry packets to terminals located inside its connectivity range. Then the terminal acts as a Master.

20 To enable identification of a terminal, a special inquiry mechanism is utilized,

enabling the terminal that is receiving an inquiry to automatically know that the inquiry is coming from a terminal device specific to an application.

5 An access code is used in paging or inquiry procedures. Before Bluetooth emission including payload and header information takes place on the recipient terminal, the access code is sent at the inquiry request stage. Figure 7 presents in more detail the ID packet including the access code. The access code consists of a preamble, a sync word, and possibly a trailer. The Inquiry Access Code (IAC) is sent from a master terminal 20 to a slave terminal 30 at regular intervals. The IAC message does not include a trailer. Thus, the message content is 68 bits long. Different access code types (for example Channel Access Code COC, Device Access Code DAC, General Access Code GIAC and Dedicated Access Code DIAC) use different Lower Access Parts (LAPs) to construct the synchronisation word. The LAP is the 24 lowest bits of the Bluetooth transceiver address, which is a unique 48-bit Bluetooth device address (BD_ADDR). The device access code is used during page, page scan and page response subsets. The LAPs, when used in inquiry packets are used as device type identifiers, i.e. to identify the type of device that should reply to the inquiry request messages.

10 If the terminal device is only responding to a specific inquiry mechanism, then it is not disturbed by other normal Bluetooth devices doing inquiries, which in turn has a positive effect on the battery life in that fewer inquiry response packets are sent. A
20 terminal device "energy saving" option that can be selected switches the terminal from normal inquiry mode to special inquiry mode, and the other way around.

It is possible to narrow down the list to the predetermined terminals by reading the

SDP databases of the various devices automatically, or the whole list of discovered devices may be displayed to the user. Inquiry means also exist to narrow down the search quite efficiently. Using one should be enough to avoid very uncomfortable user interface effects such as having to display 100 devices names. Each device in the list is represented by a human readable name. The list may be set by default in the terminal device and can be customized by the user. Then the user of the sender device will select the device to which it wants to send content.

In the case in which the user wants to send the same content to more than one device, the user interface level can be enabled by check boxes, i.e. in the list of inquired devices, there will be check boxes that the user can select and deselect. When boxes are selected, the sending process is repeated as many times as there are devices to serve without any further user interaction. This is not broadcasting, i.e. sending the same content simultaneously to multiple users, but is a series of point to point individual sending operations. The sending terminal may start to send files one after another after selection. If a file is already locally stored on the receiver terminal, the first packet that sends the first chunk of the file to the receiver terminal is refused. Then an error message, is sent including a corresponding error code, such as "data already present". Upon reception of this, the sending terminal goes on to the following file to send, and this is repeated until the end of the list of files to send.

IC cards inserted in the terminals may have specific information. The IC card of a sender terminal may have a publisher identity code (P-ID) as an AID which is stored on the IC card and which the microprocessor reads to the receiver terminal memory. The

sender terminal may have a similar publisher identity code read from its IC card to its terminal memory. If both the sender terminal and recipient terminals include an IC card having the common tailoring parameters, such as the same publisher identity (P-ID=A), or distributor identity (D-ID=B), or copyright identity (C-ID=C) then the exchange of files is possible.

An example of the data stream structure of an embodiment of the invention is illustrated in Fig. 8. The identities may include information such as a maximum number of multimedia files, or a maximum value of multimedia files, or maximum number of times that the sender terminal is authorized to send multimedia files to a recipient terminal. The sender terminal may forward the relevant data files specific to the publisher, distributor or copyright owner to recipient terminals according to the data recorded in the IC card and saved in the terminal device. The maximum times that the sender terminal is authorized to send multimedia files to another terminal means that a limited number of forwardings is recorded in the respective file. One possible way to implement this is to add-on to the multimedia file structure like a Forwarding Tag. It may not be possible to forward data files from one user terminal to another, if the respective tailoring parameters do not match. Tags usually describe very simple pieces of information that fit within a bit (boolean), or a byte at most. In that case, it is necessary to add to the multimedia file one byte of information that counts the number of forwardings of this file that are possible (e.g. from 0 to 255). The Tag value is updated after each forwarding, until the maximum number of forwardings, and further forwardings of the file are prevented.

One way to determine whether it is possible to transfer content between devices is

to see whether the content already exists in the receiving terminal device. Another way of doing it is simply to try to send the content and see whether it is accepted or whether an error message "e.g. already stored," is returned. The invention enables delivery of content through short range communication between matched terminals. Useless overwriting of content is prevented by a receiving terminal that refuses already locally stored content.

The so called OBEX or Object Exchange protocol can be used as a transport mechanism for the tailorization parameters between the IC card and the receiving terminal device. OBEX is rather flexible and simple and can be used within the framework of one of the existing Bluetooth profiles, in case the process of retrieving tailorization parameters shall be open to just any Bluetooth terminal in the future.

It will be apparent, therefore, that the illustrative embodiments described are only examples, and that various modifications can be made in the construction, method and arrangement within the scope of the invention. The present invention is capable of implementation in many forms, all of which utilize compatability between two users to exchange downloading of multimedia files. Although the invention has been described and depicted with reference to preferred embodiments, these are illustrative only, and rearrangements, alterations, and substitutions might be made, with the result still being within the scope of the invention.